AMENDMENTS TO THE SPECIFICATION:

Please replace the paragraph beginning at page 1, line 11 from the bottom and ending at page 1, line 3 from the bottom, with the following rewritten paragraph:

Although polydiacetylenes are characterized by the main chain having a fully conjugated, extended chain structure, they have also attracted much ~~atension~~ attention from the view point of optically active materials, such as an extremely large third order non-linear optical susceptibility [$\chi^{(3)}$ = 10^{-9} to 10^{-10} esu, C. Sauteret et al., Phys. Rev. Lett., 36, 956 (1976)], and photo-induced-phase transition phenomena [S. Koshihara et al., J. Chem. Phys., 92, 7581 (1990)] based on excitons of the conjugated π-electron system of the main chain.

Please replace the paragraph beginning at page 4, line 6 and ending at line 14 with the following rewritten paragraph:

In consideration of the circumstances surrounding polydiacetylenes as described above, the object of the present invention is to provide a production process of 1,4-di-substituted diacetylene polymers by controlling the average degree of polymerization and molecular weight distribution within predetermined ranges, 1,4-diacetylene polymers according to said production processes, ~~a production process that allows this control,~~ useful compositions based on the 1,4-di-disubstituted

diacetylene polymers, and constitutions of a member that uses said compositions.

Please replace the paragraph beginning at page 4, line 16 and ending at page 5, line 6 as set forth in applicants' preliminary amendment filed February 23, 2005 with the following rewritten paragraphs:

The ~~compound~~ production process according to the present invention having for its object to solve the aforementioned problems is composed of 1,4-di-substituted diacetylene polymer that is soluble in an organic solvent, composed of a repeating unit represented by the general formula =CR-C≡C-CR'=, (wherein R and R' represent identical or different monovalent organic substituents,) and ~~have~~ has an average degree of polymerization of 4 to 200 and a ratio (Mw/Mn) of weight average molecular weight (Mw) to number average molecular weight corresponding to said average degree of polymerization (Mn) of 1.1 to 5.0~~.~~ ~~wherein~~

The ~~the organic~~ substituents R and R' ~~are selected from any of~~ preferably the monovalent organic groups indicated below:

$(CH_2)_mOCONHCH_2COOC_nH_{2n+1}$ (wherein m represents an integer within the range of 3 to 6, and n represents an integer within the range of 1 to 10),

$(CH_2)_mCONHCH_2COOC_nH_{2n+1}$ (wherein m represents an integer within the range of 3 to 6, and n represents an integer within the range of 1 to 10),

$(CH_2)_mOSO_2C_6H_4CH_3$ (wherein m represents an integer within the range of 3 to 6), and

$(CH_2)_mOCONHCH_2CONHC_nH_{2n+1}$ (wherein m represents an integer within the range of 3 to 6, and n represents an integer within the range of 1 to 10).

Please replace the paragraph beginning at page 5, line 7 and ending at page 5, line 17 with the following rewritten paragraph:

The aforementioned 1,4-di-substituted diacetylene polymers according to the present invention (referred to as the "present polymer") can be produced by:

(1) irradiating a solution of soluble 1,4-di-substituted diacetylene polymer with laser light having a wavelength within the range of 250 to 1200 nm, and preferably 550 to 900 nm, to cause a photodegradation reaction of said polymer, without mixing sensitizer, wherein the irradiation time is from 10 seconds to 180 minutes,

or

(2) heating a solution of 1,4-di-substituted diacetylene polymer to a temperature of 100 to 300°C to cause thermal degradation of said polymer, without mixing sensitizer, wherein heating time is from 30 minutes to 5 hours.